

CLAIMS

What is claimed is:

1. A mounting system for a pellicle comprising:
 - a mounting structure for coupling a pellicle to a mask, wherein a sealed interior portion is formed between the pellicle, the mask and the mounting structure; and
 - a port on the mounting structure through which a pressure difference can be created between the interior portion and an exterior environment.
2. The mounting system of claim 1, further comprising a pressure regulator in communication with the port to control a pressure in the interior portion.
3. The mounting system of claim 2, further comprising a source of high pressure gas coupled to the pressure regulator, and a source of low pressure gas coupled to the pressure regulator.
4. The mounting system of claim 3, wherein one of the sources of pressure gas is the exterior environment.
5. The mounting system of claim 2, further comprising a pressure sensor operatively coupled to the pressure regulator for detecting a pressure of the interior portion.

- 1 6. The mounting system of claim 2, further comprising a position sensor operatively
2 coupled to the pressure regulator to determine the position of the pellicle;
3 wherein the pressure difference is controlled by the pressure regulator to
4 maintain a flat surface on the pellicle based on a reading from the position sensor.
- 1 7. The mounting system of claim 2, further comprising a velocity sensor operatively
2 coupled to the pressure regulator to determine the velocity of the pellicle;
3 wherein the pressure difference is controlled by the pressure regulator to
4 maintain a flat surface on the pellicle based on a reading from the velocity sensor.
- 1 8. The mounting system of claim 1, further comprising a calibrated leak from the
2 interior portion to the exterior environment.
- 1 9. The mounting system of claim 1, further comprising means for controlling the
2 pressure difference to maintain a flat surface on the pellicle.
- 1 10. The mounting system of claim 1, further comprising a position sensor to
2 determine the position of the pellicle.
- 1 11. The mounting system of claim 1, further comprising an aerodynamic fairing
2 adjacent the mounting structure.

1 12. A pellicle mounting system for a mask, the mounting system comprising:
2 an aerodynamic fairing adjacent the mask, the fairing having a taper to
3 reduce aerodynamic drag on the pellicle.

1 13. The mounting system of claim 12, further comprising:
2 a mounting structure for coupling the pellicle to the mask, wherein a
3 sealed interior portion is formed between the pellicle, the mask and the mounting
4 structure; and
5 a port on the mounting structure through which a pressure difference can be
6 created between the interior portion and an exterior environment.

1 14. The mounting system of claim 13, further comprising:
2 a pressure regulator to adjust a pressure in the interior portion;
3 a source of high pressure gas coupled to the pressure regulator; and
4 a source of low pressure gas coupled to the pressure regulator.

1 15. The mounting system of claim 14, further comprising a position sensor
2 operatively coupled to the pressure regulator to determine the position of the
3 pellicle;
4 wherein the pressure difference is controlled by the pressure regulator to
5 maintain a flat surface on the pellicle based on a reading from the position sensor.

1 16. The mounting system of claim 14, further comprising a velocity sensor
2 operatively coupled to the pressure regulator to determine the velocity of the
3 pellicle;
4 wherein the pressure difference is controlled by the pressure regulator to
5 maintain a flat surface on the pellicle based on a reading from the velocity sensor.

1 17. The mounting system of claim 13, further comprising means for controlling the
2 pressure difference to maintain a flat surface on the pellicle.

- 1 18. A method of reducing distortion of a pellicle for a mask, the method comprising
2 the steps of:
3 sealing the pellicle to the mask using an airtight mounting structure such
4 that an interior portion is created between the pellicle, the mask and the mounting
5 structure; and
6 regulating a pressure in the interior portion to maintain a flat surface on
7 the pellicle.
- 1 19. The method of claim 18, further comprising the step of providing an aerodynamic
2 fairing adjacent the mask to reduce turbulent airflow across the pellicle.
- 1 20. The method of claim 18, wherein the pressure is regulated according to feedback
2 from at least one of a pressure sensor coupled to the interior portion, a position
3 sensor for the pellicle, and a velocity sensor for the pellicle.